

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 88, line 6 as follows:

Hereinafter, embodiments of the present invention will be described with reference to the drawings. The present invention is not limited to the embodiments described below. Moreover, the present invention includes combinations of the embodiments described below. In the graded index slab waveguides according to the embodiments, the direction parallel to the z-axis is defined as the direction of the length, the direction parallel to the y-axis is defined as the direction of the ~~length thickness~~ and the direction parallel to the x-axis is defined as the direction of the width. In particular, the direction, toward the positive side, of the z-axis is defined as the transmission direction. Moreover, in the graded index slab waveguides according to the embodiments, the size in the direction parallel to the x-axis is the slab width (W), the size in the direction parallel to the y-axis is the slab thickness (D), and the size in the direction parallel to the z-axis is the slab length L. Unless otherwise specified, in the figures, the refractive index distribution is schematically shown by the shading in the figures, and the darker the shading is, the higher the refractive index is.